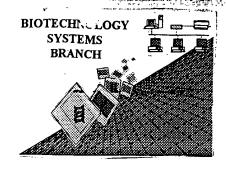
RAW SEQUENCE LISTING ERROR REPORT

Source:



0400

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) detected errors when processing the following computer readable form:

Application Serial Number: 09/729, 658

Date Processed by STIC: $\frac{12}{12}$

THE ATTACHED PRINTOUT EXPLAINS DETECTED ERRORS.
PLEASE FORWARD THIS INFORMATION TO THE APPLICANT BY EITHER:

1) INCLUDING A COPY OF THIS PRINTOUT IN YOUR NEXT COMMUNICATION TO THE APPLICANT, WITH A NOTICE TO COMPLY or,

2) TELEPHONING APPLICANT AND FAXING A COPY OF THIS PRINTOUT, WITH A NOTICE TO COMPLY

FOR CRF SUBMISSION QUESTIONS, PLEASE CONTACT MARK SPENCER, 703-308-4212.

FOR SEQUENCE RULES INTERPRETATION, PLEASE CONTACT ROBERT WAX, 703-308-4216. PATENTIN 2.1 e-mail help: patin21help@uspto.gov or phone 703-306-4119 (R. Wax) PATENTIN 3.0 e-mail help: patin30help@uspto.gov or phone 703-306-4119 (R. Wax)

TO REDUCE ERRORED SEQUENCE LISTINGS, PLEASE USE THE <u>CHECKER</u> <u>VERSION 3.0 PROGRAM</u>, ACCESSIBLE THROUGH THE U.S. PATENT AND TRADEMARK OFFICE WEBSITE. SEE BELOW:

Checker Version 3.0

The Checker Version 3.0 application is a state-of the-art Windows based software program employing a logical and intuitive user-interface to check whether a sequence listing is in compliance with format and content rules. Checker Version 3.0 works for sequence listings generated for the original version of 37 CFR §§1.821 – 1.825 effective October 1, 1990 (old rules) and the revised version (new rules) effective July 1, 1998 as well as World Intellectual Property Organization (WIPO) Standard ST.25.

Checker Version 3.0 replaces the previous DOS-based version of Checker, and is Y2K-compliant. Checker allows public users to check sequence listings in Computer Readable form (CRF) before submitting them to the United States Patent and Trademark Office (USPTO). Use of Checker prior to filing the sequence listing is expected to result in fewer errored sequence listings, thus saving time and money.

Checker Version 3.0 can be down loaded from the USPTO website at the following address: http://www.uspto.gov/web/offices/pac/checker

Raw Sequence Listing Error Summary

ERROR DETECTED SUGGESTED CORRECTION SERIAL NUMBER: () 9/1/2

ATTN.	NEW RULES CASES: P	LEASE DISREGARD ENGLISH "ALPHA" HEADERS, WHICH WERE INSERTED BY PTO SOFTWARE
1	Wrapped Nucleics	The number/text at the end of each line "wrapped" down to the next line.
'	VII appea Tradicio	This may occur if your file was retrieved in a word processor after creating it.
•		Please adjust your right margin to .3, as this will prevent "wrapping".
2	Wrapped Aminos	The amino acid number/lext at the end of each line "wrapped" down to the next line.
		This may occur if your file was retrieved in a word processor after creating it.
		Please adjust your right margin to .3, as this will prevent "wrapping".
3	Incorrect Line Length	The rules require that a line not exceed 72 characters in length. This includes spaces.
	Aticalianad Amina Anid	The numbering under each 5th amino acid is misaligned. This may be caused by the use of tabs
4	Misaligned Amino Acid Numbering	between the numbering. It is recommended to delete any tabs and use spacing between the numbers.
5	Non-ASCII	This file was not saved in ASCII (DOS) text, as required by the Sequence Rules.
		Please ensure your subsequent submission is saved in ASCII text so that it can be processed.
6	Variable Length	Sequence(s) contain n's or Xaa's which represented more than one residue.
		As per the rules, each n or Xaa can only represent a single residue.
		Please present the maximum number of each residue having variable length and
		indicate in the (ix) feature section that some may be missing.
7	Patentle yes 2.0 "byg"	A "bug" in PatentIn version 2.0 has caused the <220>-<223> section to be missing from amino acid
′ —	PatentIn ver. 2.0 "bug"	sequence(s) Normally, PatentIn would automatically generate this section from the
		previously coded nucleic acid sequence. Please manually copy the relevant <220>-<223> section
		to the subsequent amino acid sequence. This applies primarily to the mandatory <220>-<223>
		sections for Artificial or Unknown sequences.
8	Skipped Sequences	Sequence(s) missing. If intentional, please use the following formal for each skipped sequence:
·	(OLD RULES)	(2) INFORMATION FOR SEQ ID NO:X:
	(OLD NOCES)	(i) SEQUENCE CHARACTERISTICS:(Do not insert any headings under "SEQUENCE CHARACTERISTICS")
		(xi) SEQUENCE DESCRIPTION:SEQ ID NO:X:
		This sequence is intentionally skipped
		Please also adjust the "(iii) NUMBER OF SEQUENCES:" response to include the skipped sequence(s).
		-
9	Skipped Sequences	Sequence(s) missing. If intentional, please use the following format for each skipped sequence.
	(NEW RULES)	<210> sequence id number
ĺ		<400> sequence id number
		000
$_{\rm in}$ \cup	Use of n's or Xaa's	Use of n's and/or Xaa's have been detected in the Sequence Listing.
	(NEW RULES)	Use of <220> to <223> is MANDATORY if n's or Xaa's are present.
	(NEVV NOCES)	In <220> to <223> section, please explain location of n or Xaa, and which residue n or Xaa represents.
l 1	Use of <213>Organism	Sequence(s) are missing this mandatory field or its response.
·	(NEW RULES)	
12	Use of <220>Feature	Sequence(s) are missing the <220>Feature and associated headings.
	(NEW RULES)	Use of <220> to <223> is MANDATORY if <213> ORGANISM is "Artificial" or "Unknown"
		Please explain source of genetic material in <220> to <223> section.
		(See "Federal Register," 6/01/98, Vol. 63, No. 104, pp. 29631-32) (Sec. 1.823 of new Rules)
13	Palentin ver. 2.0 "bug"	Please do not use "Copy to Disk" function of Patentln version 2.0. This causes a corrupted
· • ——	- diciniii ver. 2.0 bug	Title, Testilling in missing mandatory numeric identifiers and responses (as indicated on raw sequence listing).
	•	Instead, please use "File Manager" or any other means to copy file to floppy disk.

OIPE

 RAW SEQUENCE LISTING
 DATE: 12/12/2000

 PATENT APPLICATION: US/09/729,658
 TIMF: 12:07:55

Input Set : A:\55924.app

Output Set: N:\CRF3\12122000\I729658.raw

Does Not Comply Corrected Diskette Needed

3 ... | 10> APPLICANT: Lonana et al. 5 -129> TITLE OF INVENTION: Hypohydrotic ectodermal dysplasia genes and proteins 7 <130> FILE REFERENCE: 55924 9 <140> CURRENT APPLICATION NUMBER: US/09/729,658 10 <141> CURRENT FILING DATE: 2000-12-04 12 <150> PRIOR APPLICATION NUMBER: 09/342.681 13 - 154> PRIOR FILING DATE: 1999-06-29 15 - 150> PRIOR APPLICATION NUMBER: 60/092,279 16 - 151> PRIOR FILING DATE: 1998-07-09 18 <150> PRIOR APPLICATION NUMBER: 60/112,366 19 <151> PRIOR FILING DATE: 1998-12-15 21 - 160> NUMBER OF SEQ ID NOS: 122 23 <170> SOFTWARE: Patentin Ver. 2.1 25 <210> SEQ 1D NO: 1 26 <211> LENGTH: 1574 27 <212> PYPE: DNA 28 <213> ORGANISM: Homo sapiens RO <220> FEATURE: 31 <221> NAME/KEY: CDS 32 <222> LOCATION: (242)..(1417) 34 <400> SEQUENCE: 1 35 attecetogg egggocages tecentalet enegeneete etectonett teceacenet 60 37 eggagtagag etgeacatge ggetgetees tgeteegtee egeecageea etgtegegea 120 39 ggaacgggtc cotgoagoer chagcogatg ghaggahagt agongcotgt hagaggthigt 180 41 gaarqqciqa qqcagacqca qcqqctcccq qqcctcaaga gaqtqqqtqt ctccqqaqqc 240 43 c atg qgc tac ccg gag gtg gag cqc agg gaa ctc etg cet gca gea gcg 289 44 Met Gly Tyr Pro Glu Val Glu Arg Arg Glu Leu Leu Pro Ala Ala Ala 1.0 5 17 ceq egg gag ega ggg age eag gge tge ggg tgt gge ggg gee eet gee 48 Pro Arg Gin Arg Giy Ser Gin Giy Cys Giy Cys Giy Giy Ala Pro Ala 49 20 25 30 51 agg gag gge gaa ggg aan ago tgo otg ato tto etg ggt tto ttt gga 52 Arg Ala Gly Glu Gly Asn Ser Cys Leu Leu Phe Leu Gly Phe Phe Gly 53 45 45 55 ctc teg ctg gcc ctc cac ctg ctg acg ttg tgc tgc tac cta gag ttg
56 Leu Ser Leu Ala Leu His Leu Leu Thr Leu Cys Cys Tyr Leu Glu Leu
57 50 55 60 433 59 cgc tog gag tig ogg ogg gaa ogl gga god gag tod ogd oll ggd ggd 481 60 Arg Ser Glu Leu Arg Arg Glu Arg Gly Ala Glu Ser Arg Leu Gly Gly 75 61 65 70 63 tog ago acc cot ggo acc tot ggo acc cta ago ago oto ggt ggo oto 529 64 Ser Gly Thr Pro Gly Thr Ser Gly Thr Leu Ser Ser Leu Gly Gly Leu 90 8.5 67 gar cet, gac ago ecc ate acc agt eac ett ggg eag ecy tea eet aug 577 68 Asp Pro Asp Ser Pro Ile Thr Ser His Leu Gly Cln Pro Ser Pro Lys 69 100 105 110 71 cag cag coa ttg gaa eeg gga gaa gee gea etc cae tet gae tec cag 625

RAW SEQUENCE LISTING DAIE: 12/12/2000 PATENT APPLICATION: US/09/729,658 PIME: 12:07:55

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vii. (1) ii.
er Glu
ia aag - 673
lu Lys
1.4 177.
ja age 721
ig Ser
160
ng gga 769
ys Gly 75
ro Gly
0.75
galatt 865
ly fle
et. ggt - 913
co Gly
at; aaa 961
Asp Lys
240
ige caa = 1009
1 2
ily Gln
1 2
ily Gla
ily Glo 255 etc aat - 1057
11y Gln 255
Nly Głn 255 etc aat 1057 Leu Asu
Niy Gin 255 etc aat 1057 Leu Asu
Nly Głn 255 etc aat 1057 Leu Asu
My Gln 255 erc aat 1057 Len Asn cat ecc 1105 His Pro
My Gln 255 erc aat 1057 Len Asn sat ecc 1105 His Pro
My Gln 255 etc aat 1057 Leu Asu cat ecc 1105 His Pro
Nly Gln 255 erc aat 1057 Len Asn cat ccc 1105 His Pro itc tat 1353
My Gln 255 ctc aat 1057 Len Asn cat ccc 1105 dis Pro atc tat 1153 Le Tyr agc tat 1201
Nly Gln 255 erc aat 1057 Len Asn cat ccc 1105 His Pro itc tat 1353
My Gln 255 procaat 1057 Len Asn pat ccc 1105 His Pro arc tat 1153 Le Tyr age tat 1201 Ger Tyr 320
My Gln 255 etc aat 1057 Leu Asn cat ccc 1105 dis Pro arc tat 1353 lle Tyr agc tat 1201 Ser Tyr 320 agc atc 1249
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My Gln 255 etc aat 1057 Len Asn cat ccc 1105 His Pro etc tat 1353 Le Tyr age tat 1201 Ser Tyr 320 ecc atc 1249 Ser Ile 335
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My Glo 255 crc aat 1057 Len Asn cat ccc 1105 dis Pro are tat 1153 lle Tyr age tat 1201 Ser Tyr 320 age atc 1249 Ser Ile 335 grc tgc 1297 Val Cys
My Gln 255 ptc aat 1057 Leu Asn cat ccc 1105 His Pro arc tat 1353 He Tyr agc tat 1201 Ser Tyr 320 agc atc 1249 Ser Ile 335 gtc tgc 1297 Val Cys get gac 1345
My Glo 255 crc aat 1057 Len Asn cat ccc 1105 dis Pro are tat 1153 lle Tyr age tat 1201 Ser Tyr 320 age atc 1249 Ser Ile 335 grc tgc 1297 Val Cys
My Gln 255 etc aat 1057 Len Asn cat ccc 1105 His Pro arc tat 1353 He Tyr agc tat 1201 Ser Tyr 320 agc atc 1249 Ser ILe 335 gre tgc 1297 Val Cys gct gac 1345 Ala Asp
My Gln 255 ptc aat 1057 Leu Asn cat ccc 1105 His Pro arc tat 1353 He Tyr agc tat 1201 Ser Tyr 320 agc atc 1249 Ser Ile 335 gtc tgc 1297 Val Cys get gac 1345

RAW SEQUENCE LISTING DATE: 12/12/2000 PATENT APPLICATION: US/09/729,658 TIME: 12:07:55

Imput Set : A:\55924.app
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134	etq	qqt	qaa	gác	cct	gea	tec	tag	atte	adda	at t	Litigo	retel	tg to	regly	accec	1447
140	Len	GLZ	Glu	ÁΙα	org	Ala	Ser	-									
141	385					390											
143	tlee	rotuq:	agt 1	Etgga	jage	ga qo	queto	occaa	a aac	reter	aag	tget	igete	gt.g -c	jagte	gaqqt.g	1507
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157	1		٠		5					10					15		
158	Pro	Arg	Glu	Arg	G17	Ser	GIn	Gly	Cvs	Gly	C78	Gly	Gly	Ala	Pro	Ala	
159				20	•			•	25	•		٠	•	30			
160	Arg	Ala	G17	GLu	Gly	Asn	Ser	Cys	Leu	Leu	Phe	Leu	GLy	Pho	Phe	Gly	
161			35		•			40					45				
162	Leu	Ser	Leu	Ala	Leu	His	[.eu	Leu	Thr	Leu	Cys	Cys	Tyr	Leu	Glu	Leu	
163		50					5.5				·	6.0	•				
164	Arq	Ser	Glu	Leu	Arg	Arq	Glu	Arq	Gly	Ala	Glu	ser	Arg	Leu	Gly	Gly	
165	6.5					70					75					8.0	
166	ser	GIV	Thr	Pro	Gly	Thr	ser	Gly	Thr	Leu	Ser	ser	Leu	Gly	Gly	Leu	
167		•			85					9.0					9.5		
168	Asp	Pro	Asp	Ser	Pro	He	Thr	Ser	His	Leu	Gly	G1n	Pro	ser	Pro	Lys	
169				100					105					1.10			
170	Gln	Gln	Pro	Leu	GLu	Pro	GLy	Glu	Ala	Alu	1,60	His	ser	Asp	ser	Gin	
171			1.15					120					125				
172	Asp	Gly	His	G l.n	Met	Ala	Leu	Leu	Asn	Phe	Phe	Phe	Pro	Asp	Glu	Lys	
173		130					135					140					
174	Pro	Tyr	Ser	${\rm GLu}$	G1u	${\rm GL}\mathfrak{u}$	ser	Arq	Arq	Val	Arg	Arq	Asu	${\rm Lys}$	A.r.g	Ser	
175	145					150					155					160	
176	Lys	ser	Asn	Glu	GL_2	Ala	Asp	Gly	Pro	Val	Lys	Asn	Lys	Lys	LYS	Gly	
177					165					170					175		
178	Lys	Lys	Λla	GLy	Pro	Pro	GLy	Pxo	Asn	Gly	P ro	Pro	Gly	pro	Pro	GLy	
179				180					185					190			
180	pro	Pro	Gly	Pro	GIn	Gly	Pro	Pro	Gly	Tle	Pro	Gly	He	Pro	Gly	He	
181			195					200					205				
182	pro	GIZ	Thr	Thr	Val	Medi	Gly	Pro	Pro	Gly	Pro	$P \tau \phi$	Gly	Pro	Pro	Gly	
183		21.0					215					220					
1.84	Pro	$_{\rm G1n}$	Gly	Pro	Pro	Gly	Leu	Gln	Gly	Pro	Ser	Gly	Ala	Ala	Asp	LYS	
	225					230					235					240	
186	Ala	Gly	Thr	Arg	Glu	Asn	Gln	Pro	Ala		Val	His	Leu	Gln		Gln	
187					245					250					255		
188	Gly	ser	Ala		Gln	Va.l	Lys	Asn		Leu	Ser	Gly	GLy		Leu	Asn	
189				260					265					270			
190	Asp	Trp		Arg	r l.e	Thr	Met	Asn	Pro	Lys	Val	Phe		Leu	His	Pro	
191			275					280					285				
192	Агд	Ser	Gly	Glu	Leu	Glu	Va L	Leu	Va l	Asp	Gly	Thr:	Туг	Phe	He	Tyr	

 RAW SEQUENCE LISTING
 DATE: 12/12/2000

 PATENT APPLICATION: US/09/729,658
 TIME: 12:07:55

Input Set : A:\55924.app
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103		2 G ()					290					300					
1 ±4	Ser	Gln	val	Glu	Val	Tyr	Tyr	-11e	Asn	Phe	Thr	Asp	Phe	ALa	Ser	770	
195	305					3 [()					315					320	
196	G1.4	Val]	Val	Vil	Asp	GLu	Lys	Pro	Phe	1.eu	Gln	C78	${\rm Th} r$	Arg	ser	110	
197					325					330					335		
198	Clu	Thi	C19	LyS	Thr	Asn	171	Asn	Thr	Cys	ГУГ	Thr	Ala	GL_{Σ}	Val	Cys	
149			•	540			•		345	1	•			350		•	
200	Leu	Len	Les	Ala	Ara	GIn	1.93	He	Ala	Val	1778	Mort	Val	His	Ala	Asn	
201			355		,			360			10,7		365				
	He	Sur		Aen	Mod	Sor	tive		Whe	The	uho	Dho		Δla	110	Acc	
203		370	110	235511	710 1.	.31	375	11.12.29	1 111.	1111	1 310.	380	(1.1.)	713.G	Lite	nig	
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		ULY	GTU	HIG	PIO	390	501										
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212	<21	3> 0	RGAN	ISM:	Mus	muse	rulus	3									
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216	422	2> Lo	CAT	ION:	(14)	2)	(1.279)	5)									
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219	tica	qqaa	caa c	at.ccc	et aca	ag co	races	agee	ate	qeaq	qae	agta	agte	ace t	gtica	aggggt.	6.0
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	taq										. ,						171
224			,		9749	,			Tyr								
225							1		.,.		5	,	0.4.0	. ,	, . , ,	1.0	
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	Pro																4 1.7
229	FLO	1.0011	P J. O	ита		ma	RIO	ar à	GIU	20	оту	ser	GIII	GTA	25	G J. Y	
	4 4				.15												363
231	. , .		ggg						4. 1.	gaa	ààà						267
	CAR	Arq	GL y	A1a	610	Ala	Arg			43 L							
233								23 1 02	-	GLu	GLY	Asn	Ser	-	Arq	Leu	
	ttc								35		-			4.0			
		-	qgt,	ttc				Leg	35 ctg	ācc	ctc	cac	ct.g	40 ctg	acg	ctg	315
	Phe	-	Cly	ttc				tog Ser	35 ctg	ācc	ctc	cac	et.g Leu	40 ctg	acg	ctg	315
237	Phe	Leu	G1y 45	ttc Phe	Phe	Cly	Leu	tog Ser 50	35 etg Leu	gen Ala	ete Leu	cac His	etg Leu 55	40 ctg Leu	acg Thr	ctg Leu	
237 239	Phe tge	Leu	Gly 45 tac	ttc Phe cta	Phe gag	Gly trq	Leu	tog ser 50	35 etg Leu qaa	gen Ala ttg	ctc Leu	cac His	ctg Leu 55 gaa	40 ctg Leu	acg Thr	ctg Leu acc	315
237 239	Phe	Leu	Gly 45 tac	ttc Phe cta	Phe gag	Gly trq	Leu	tog ser 50	35 etg Leu qaa	gen Ala ttg	ctc Leu	cac His	ctg Leu 55 gaa	40 ctg Leu	acg Thr	ctg Leu acc	
237 239	Phe tge	Leu	Gly 45 tac	ttc Phe cta	Phe gag	Gly trq	Leu	tog ser 50	35 etg Leu qaa	gen Ala ttg	ctc Leu	cac His	ctg Leu 55 gaa	40 ctg Leu	acg Thr	ctg Leu acc	
237 239 240 241	Phe tge	Lou tyc Cys 60	Gly 45 tac Tyr	ttc Phe cla Leu	Phe gag Glu	Cly trq Leu	Leu egg Arg 65	tog Ser 50 toc Ser	35 etg Leu qaa Glu	gee Ala ttg Leu	ctc Leu cgg Arg	cac His cqg Arq 70	ctg Leu 55 gaa Glu	40 ctg Leu cgq Arq	acg Thr qqa Gly	ctg Leu acc Thr	
237 239 240 241 243	Phe tgc Cys	tyc Cys 60	Gly 45 tac Tyr	ttc Phe cla Leu ctc	Phe gag Glu ggt	Cly trq Leu gqc	Leu cgg Arq 65 ccg	tog Ser 50 toc Ser	35 etg Leu gaa Glu gct	gee Ala ttg Leu cet	ctc Leu cgg Arg	cac His Cqg Arq 70	ctg Leu 55 gaa Glu	40 ctg Leu cgq Arq	acg Thr qqa Gly	ctg Leu acc Thr	363
237 239 240 241 243	Phe tqc Cys gag	tyc Cys 60	Gly 45 tac Tyr	ttc Phe cla Leu ctc	Phe gag Glu ggt	Cly trq Leu gqc	Leu cgg Arq 65 ccg	tog Ser 50 toc Ser	35 etg Leu gaa Glu get	gee Ala ttg Leu cet	ctc Leu cgg Arg	cac His Cqg Arq 70	ctg Leu 55 gaa Glu	40 ctg Leu cgq Arq	acg Thr qqa Gly	ctg Leu acc Thr	363
237 239 240 241 243 244 245	tge Cys gag Glu 75	tyc Cys 60 tcc Ser	Gly 45 tac Tyr cgc Arg	tto Pho cta Leu cto Lou	Phe gaq Glu ggt Gly	Cly trq Leu gqc Gly 80	Leu egg Arg 65 eeg Pro	tog Ser 50 toc Ser ggt Gly	35 ctg Leu qaa Glu qct Ala	gee Ala ttg Leu cet Pro	ctc Leu cgg Arg ggc GL7 85	cac His Cqg Arq 70 acc	ctg Leu 55 gaa Glu tct Ser	40 ctg Leu cgq Arq ggc Gly	acg Thr qqa Gly acc Thr	ctg Leu acc Thr cta Lou 90	363
237 239 240 241 243 244 245 247	tgc Cys gag Glu 75	tgc cys 60 tcc ser	Gly 45 tac Tyr cgc Arg	ttc Phe cla Leu ctc Leu	Phe gag Glu ggt Gly age	trq teu gqc Gly 80 ctc	ngg Arg 65 cog Pro	tog ser 50 toc ser ggt Gly	35 etg Leu qaa Glu qct Ala	gcc Ala ttq Leu cct Pro	etc Leu ngg Ang ggc Gly 85	cac His eqg Arq 70 acc Thr	ctg Leu 55 gaa Glu tct Ser	40 ctg Leu cgq Arq ggc Gly	acg Thr qga Gly acc Thr	ctg Leu acc Thr cta Lou 90 ctg	363 411
237 239 240 241 243 244 245 247 248	tge Cys gag Glu 75	tgc cys 60 tcc ser	Gly 45 tac Tyr cgc Arg	ttc Phe cla Leu ctc Leu	Phe gag Glu ggt Gly age ser	trq teu gqc Gly 80 ctc	ngg Arg 65 cog Pro	tog ser 50 toc ser ggt Gly	35 etg Leu qaa Glu qct Ala	gcc Ala ttq Leu cct Pro	etc Leu ngg Ang ggc Gly 85	cac His eqg Arq 70 acc Thr	ctg Leu 55 gaa Glu tct Ser	40 ctg Leu cgq Arq ggc Gly	acg Thr qga Gly acc Thr	ctg Leu acc Thr cta Lou 90 ctg	363 411
237 239 240 241 243 244 245 247 248 249	tge Cys gag Glu 75 age Ser	tyc Cys 60 tcc Ser agc	Gly 45 tac Tyr cqc Arg cct Pro	ttc Phe cla Leu ctc Leu ggg Gly	Phe gag Glu ggt Gly agc ser 95	Cly trq Leu gqc Gly 80 ctc Leu	Leu cgg Arg 65 ccg Pro gac Asp	tog ser 50 tro ser ggt Gly ogg	35 etg Leu qaa Glu qct Ala gtg Val	gcc Ala ttg Leu cct Pro ggt Gly 100	ctc Leu cgg Arg ggc GL7 85 ccc Pro	cac His Cqg Arq 70 acc Thr	ctg Leu 55 gaa Glu tct Ser acc Thr	40 ctg Leu cgq Arq ggc Gly cgc Arg	acg Thr qqa Gly acc Thr cac His 105	ctg Leu acc Thr cta Leu 90 ctg Leu	363 411 459
237 239 240 241 243 244 245 247 248 249 351	tge Cys gag Giu 75 age Ser	tyc Cys 60 tcc Ser age ser	Gly 45 tan Tyr cgc Arg cet Pro	ttc Phe cla Leu ctc Leu ggg Gly	Phe gag Glu ggt Gly age Ser 95 ttt	Cly trq Leu gqc Gly 80 ctc Leu caa	rgg Arg 65 ccg Pro gac Asp	tog Ser 50 toc Ser ggt Gly cog Pro	35 etg Leu qaa Glu gct Ala gtg Val	gcc Ala ttq Leu cct Pro ggt Gly 100 ttg	ctc Leu cgg Arg ggc Gly 85 ccc Pro	cac His Cqg Arq 70 acc Thr atc Ile	ctg Leu 55 gaa Glu tct Ser acc Thr	40 ctg Leu cgg Arg ggc Gly cgc Arg	acg Thr qga Gly acc Thr cac His 105	ctg Leu acc Thr cta Leu 90 ctg Leu cca	363 411
237 239 240 241 243 244 245 247 248 249 251	tge Cys gag Glu 75 age Ser	tyc Cys 60 tcc Ser age ser	Gly 45 tan Tyr cgc Arg cet Pro	ttc Phe cla Leu ctc Leu ggg Gly tcc Ser	Phe gag Glu ggt Gly age Ser 95 ttt	Cly trq Leu gqc Gly 80 ctc Leu caa	rgg Arg 65 ccg Pro gac Asp	tog Ser 50 toc Ser ggt Gly cog Pro	35 etg Leu qaa Glu gct Ala gtg Val cct Pro	gcc Ala ttq Leu cct Pro ggt Gly 100 ttg	ctc Leu cgg Arg ggc Gly 85 ccc Pro	cac His Cqg Arq 70 acc Thr atc Ile	ctg Leu 55 gaa Glu tct Ser acc Thr	40 ctg Leu cgg Arq ggc Gly cgc Arg	acg Thr qga Gly acc Thr cac His 105	ctg Leu acc Thr cta Leu 90 ctg Leu cca	363 411 459
237 239 240 241 243 244 245 247 248 249 251 252 253	tge Cys gag Giu 75 age Ser ngg Gly	tyc Cys 60 tcc Ser age Ser cag	Gly 45 tan Tyr cgc Arg cct Pro	ttc Phe cla Leu ctc Leu ggg Gly tcc ser 110	Phe gag Glu ggt Gly age ser 95 ttt Phe	Cly trq Leu gqc Gly 80 ctc Leu caa Gln	Leu ngg Arg 65 cog Pro gac Asp cag Gln	tog ser 50 the ser ggt Gly cog Pro cag Gln	35 ctg Leu qaa Glu gct Ala gtg Val cct Pro 115	gcc Ala ttg Leu cct Pro ggt Gly 100 ttg Leu	ctc Leu cgg Arg ggc GL7 85 ccc Pro gaa Glu	cac His Cqg Arq 70 acc Thr atc Ile	ctg Leu 55 gaa Glu tct Ser acc Thr	40 ctg Leu cgq Arq ggc Gly cgc Arg gaa Glu 120	acg Thr qqa Gly acc Thr cac His 105 gat Asp	ctg Leu acc Thr cta Leu 90 ctg Leu cca Pro	363 411 459 507
237 239 240 241 243 244 245 247 248 249 251 252 253 255	tge Cys gag Giu 75 age Ser	tyc Cys 60 tcc Ser age Ser cag Gin	Gly 45 tan Tyr cgc Arg cet Pro ceg Pro	ttc Phe cla Leu ctc Leu ggg Gly tcc ser 110 gag	Phe gag Glu ggt Gly age ser 95 ttt Phe	Cly trq Leu guc Gly 80 ctc Leu caa Gln	rgg Arg 65 ccg Pro gac Asp cag Gln	tog ser 50 toc ser ggt Gly cog Pro cag Gln	35 etg Leu qaa Glu gct Ala gtg Val cct Pro 115 cac	gcc Ala ttg Leu cct Pro ggt Gly 100 ttg Leu cag	ctc Leu cgg Arg ggc GL7 85 ccc Pro gaa Glu atq	cac His eqg 70 acc Thr atc Ile ecg Pro	ctg Leu 55 gaa Glu tct Ser acc Thr gga Gly	40 ctg Leu cgg Arg ggc Gly cgc Arg gaa Glu 120 ctg	acg Thr qqa Gly acc Thr cac His 105 gat Asp	ctg Leu acc Thr cta Leu 90 ctg Leu cca Pro	363 411 459

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/729,658

DATE: 12/12/2000 TIME: 12:07:55

Input Set : A:\55924.app
Output Set: N:\CRF3\12122000\1729658.raw

257			125					130					135				
359	ttc	t.t.t	cct	gat	gaa	aag	gca	tut	tct	पुवत	gag	qua	uqt	agq	cqt	gtt	603
260	Phe	the	Pro	Asp	Glu	Lys	Ala	fyr	ser	Glu	Glu	Glu	ser	Ard	Arg	Val	
264		140					145					150					
263	cqc	CGC	aat	aag	aga	age	aaa	agt.	qqt	qaa	qqa	qca	gat	ggt	cet	gtt	651
36.4	ALG	A19	Asn	Lys	Arg	Ser	Lys	Ser	$\mathrm{G} \mathrm{L} \lambda$	CLu	GIV	Ala	Asp	GLY	bto	Vitl	
65	155					160					165					170	
267	add	aac	aaq	aaa	aaq	gga	aag	aag	чса	ddd	cca	cet	gqq	ccc	aac	ddc	699
268	Lys	Asn	Lys	Lys	Lys	Gly	Lys	L78	Ala	GLY	Pro	Pro	G17	Pro	Asn	Gly	
269					175					1.80					185		
271	ccc	cca	gga	cct	cca	gga	cct	cca	qqa	CCC	cag	gga	cet	спа	qqq	at.t.	747
272	Pro	Pro	G17	Pro	Pro	Gly	Pro	Pro		Pro	Gln	GIY	Pro	Pro	Gly	He	
273				1.90					195					200			
275	cca	gga	at.t.	cet	qqq	att	cca	qqa	aca	act.	gt.t	atg	gga	eca	cct	adc	795
276	Pro	GL_I	IΙο	Pro	Gly	Hle	Pro		Thr	Thr	Val	Met.	GLV	pro	Pro	$G1\gamma$	
277			205					210					215				
279	сса	cat	qqc	cct.	cat	ggt.	cct	caa	पपव	CCC	cct	dåc	et.e	Cda	gga	cat	843
280	$P {\cal L} O$	Pro	Gly	6.1.0	Pro	Gly		Gln	GLy	5.0	Pro	Gly	Leu	GLn	G17	Pro	
281		220					225					230					0.0.1
283	tet	qqt	get	get	gat	aaa	act	gqa	act	cdd	gaa	aat	cag	cca	get	qt.q	891
284	ser	Glv	Ala	Ala	Asp		Thr	Gly	Thr	Arq		Asn	Gin	Pro	Ala	val	
285	235					240					245					250	6.20
287	gt.g	cat	cra	cag	ggc	caa	ddd	tica	qca	a t. t.	саа	gtc	aaa	aar	gat	ett.	939
288	Väl.	His	Le∙u	Gln		Gln	GTA	Ser	Ala	He	Gln	Val.	Lys	ASA	Asp	ren	
289					255					260					265		605
291	t.ca	ggt,	gga	gtg	atta	aat:	gac	rgg	Lot.	cgc	atic	act	atg	aac	cat	aag	987
	Ser	GLY	Gly		Leu	Asn	Asp	Trp		Arg	He	3'0 r	Met	ASD	Pro	ьys	
293				270					275					280			1.035
295	gtg	titit	aaa	cta	cat	CCC	cgc	age	ggg	gag	etg	gag	gtc	tac	tac	allo	1.0 5 5
	val.	Phe		Leu	His	Pro	Arg		GLY	GIH	Leu	GLU	Vall	туг	Туг	116	
297			285					290			- 1	6	295		22.00	600	1083
299	aac	ttc	act.	gac	ttt	gcc	agc	tac	gaq	gr.g	quq	91.9	yar	73.0	aag	Dec	1003
	Asn		Thr	Asp	Phe	Ala		туг	GTU	Va L	Val.	310	ASP	UTU	Lys	PTO	
301		300					305	- 4 4		F 42 5	0.000		200	220	tac	220	1.1 3 1.
303	1.1.0	etg	cag	T.g.c	acc	cdc	age	dil.i.	gag	arca mt	999	tara	artice.	Agr.	tac	Aan	1.3.02.
		Leu	GIn	Cys	The		Ser	110	GIU	1.11.1	325	Liys	1313	WEII	Tyr	330	
305	315					320		ti er es				ann	300	carr	aaa		1179
307	act	Edc	Lat	act.	qea	ggc	gug	Ege	CHU	Lou	aag	gcc Ala	Ara	can	aaa Lys	Tla	11.)
	Thr	Cys	туг	Thr		GTY	Valit	Cys	1.4411	340	Бγэ	75.E.O	мгд	() 1, 11	345	1 4.5	
309					335		a a tr	~ 10	21.0		ato	a a t	atro	auc	aaq	cac	1227
3.1.1	dcc	- dra	aaq	alg	grg	Cac	qci.	gae	TLO	0.00	TLO	Acn	Mot	Sor	Lys	Hie	
	Ala	Val	ьуѕ		vai	HIS	A.I.a	ASP	355	эет	LIC	ASU	PIC: C	360	БуЗ	113.0	
313				350		200	21.0	200		aaa	n a a	acc	cet		ticc	Lao	1275
31.5	acc	acc	Uha	LI C	999	900	lle	Ara	Tou	014	- eta	Ala	Pro	Δla	Ser		1.2.
	Tur	Thr		FHG	GTÄ	Ala	1.08	- A79 - 370	neu	OIY	Uitu	niu	375	4 3 .1 Cd	000		
317		.a.t. e	365	traan	t 0.0±	aa a	oca+		o ta	cece	a arrt	rto		cca	aaae	teceag	1335
319	d L [ctat atat	uar.	taat	acta	yy C ta t	otar.	good	o og a arr	tata	ctac	cal	t ace	acc	acaa	agagaa	1395
321	aac	GLCE	aag ata	egitt. alsæ	guly Hal	ing t	9 699 0034	taac	u 99 L co	adda	t dan	aad	acat	at.o	Loac	ttccca	1455
323	alg	occc	alg	ulat	LLUL	LC C	cuay	cgac		ayya	agas	ra ca și	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	5	- y u - o		

●09/729658 E

<210> 5 <211> 630 <212> DNA <213> Homo sapiens <400> 5 Jen 10 on Evan Jummany Sheet acagtggggg ggaagatggg ctcagggttt agacacatca aacttaaggt acaggtagac 60 tgtdntatgg aaagatggtt ttttatgttg gctatgactg agtggggtca acctttgact 120 gatgtacttg taatttttac agatggccct attgaatttc ttcttccctg atgaaaagcc 180 atactctgaa gaagaaagta ggcgtgttcg ccgcaataaa agaagcaaaa gcaatgaagg 240 agcagatggt aagtctactc agttgatcct ttatcacttc tgaattattt gttagtaaaa 300 gtatcctttt aagaactacc ttcttggtag ggcatggtgg ctcacgcctg taatcctagc 360 aacatggtga aaccctgtct ctactaaaaa tacaaaaaaa attagccggg cctagtccca 480 gctgcttggg agactaaggc aggagaatcg cttgaaactg ggaggtagag gttgcagtga 540 gctgagactg tgccactgca ctccagcctg ggtgacagtg cgagactcca tctcaaaaaa 600 630 caaaaacaaa caaaaaaaaa cactaccttt

FYI!

Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

 VERIFICATION SUMMARY
 DATE: 12/12/2000

 PATENT APPLICATION: US/09/729,658
 PIME: 12:07:56

Input Set : A:\55924.app
Output Set: N:\CRF3\12122000\1729658.raw

L:2763	и. 341	W:	(46)	" 11 "	or	"Xaa"	used,	for	SEQ	10#:101	
L:2764	H: 34 I	W :	(45)	" H "	OI	"Xāā"	used.	for	SEQ	10%:101	
L.2765	M:341	W:	(46)	" h "	or	"Xaa"	used,	tor	SEQ	10:.101	
1:2766	Et:311	W:	(46)	a U u	or	"Xaa"	used,	for	SEO	119:103	
ь:2767	M:341	W:	(46)	9 11 9	0.1	"Xaa"	used,	tor	SLQ	ID::101	
L:2768	M: 341	W:	(10)	" 11 "	σr	"Xaa"	used,	for	SFQ	104:101	
L:2769	14:341	V. :	(46)	$^{\rm u}{\rm n}^{\rm u}$	Oτ	"Xāa"	used.	for	SLO	10:101	
1.:2770	14:341	W:	(46)	" B "	or	"Xaa"	used,	tor	SEQ	fp#:101	
L:2775	44:341	W :	(46)	" 11 "	or	"Xaa"	used,	tor	SLQ	1D#:101	
L:2803	M:341	W:	(46)	$^{\prime\prime}\Pi^{\prime\prime}$	or	"Xaa"	used,	tor	SEQ	10#:103	
L:2804	M: 341	W:	(46)	" li "	αr	"Xaa"	used,	for	SEQ	1D#:103	
L:2836	H:341	lv:	(46)	" H "	or	"Xaa"	used,	for	SEQ	ID#:105	
L:2837	M:341	W:	(46)	$^{\alpha}n^{\alpha}$	or	"Xaa"	used,	for	SEQ	10#:105	
L:2838	14:341	W:	(46)	"n"	or	"Xaa"	used,	for	SFQ	1104:105	
L:2839	M:311	W:	(46)	"n"	OΓ	"Xaa"	used,	lor	SEQ	10%:105	
L:2840	14:341	W:	(46)	$^{\rm H}$ O $^{\rm H}$	or	"Xaa"	used,	for	SEQ	10:105	
L:2841	H:341	W:	(46)	n D n	OT	"Xaa"	used,	lor	SEQ	ID#:105	
L:2892	M:341	W:	(46)	" fi "	10	"Xaa"	used,	for	SEO	1D#:109	
1.:2918	M:347	W:	(46)	"n"	or	"Xaa"	used,	for	SEQ	TD#:111	
L:2924	M:341	W:	(46)	" $^{\prime\prime}$ "	or	"Xaa"	used,	for	SEQ	10:111	
L:2925	M:341	W:	(46)	" D "	or	"Xaa"	used,	for	SEQ	fD#:111	
L:2926	и:341	W :	(46)	" n "	or	"Xaa"	used,	ror	SEO	10#:111	
L:2927	M:34T	W:	(46)	"n"	or	"Xaa"	used,	for	${\rm SEQ}$	1D#:111	
L:2928	M:341	W:	(46)	n II n	or	"Xaa"	used,	tor	SEO	110#:111	
L:2929	M:341	W:	(46)	" n "	or	"Xaa"	used,	for	SEQ	10#:111	
L:2950	M:341	W:	(46)	" II "	α	"Xaa"	used,	Lor	SEQ	JD#:112	
L-2969	M:341	W:	(16)	" n "	or	"Xaa"	used,	for	SEQ	110#:113	
$1_i:2993$	11:341	₩:	(46)	" ft "	or	"Xaa"	used,	tor	SLQ	ID#:115	
1.:2994	M:341	₩:	(46)	" tt "	OT	"Xaa"	used,	tor	${\tt SEQ}$	10#:115	
L:2995	M:341	W:	(46)	" n "	or	"Xaa"	used.	for	SEQ	1D#:115	
£:2996	M:341	W :	(46)	" n "	on	"Xaa"	used,	for	SEQ	10#:115	
L:3020	M:341	W:	(46)	"n"	or	"Xaa"	used,	for	SEO	ID#:116	
L:3022	M:341	W:	(46)	" II "	or	"Xaa"	used,	tor	SEQ	LD#:116	
L:3023	M: 341	W:	(46)	" II "	or	"Xaŭ"	used,	for	SEQ	1D#:116	
1.:3047	M: 341	W :	(46)	"n"	OL	"Xaa"	used,	for	SEQ	LD#: I 1.6	
	H:347	W:	(46)	" n "	or	"Xaa"	used,	for	SEQ	ID#:116	
L:3057	M:341	W:	(46)	$_{\rm u}$ $^{\rm H}$ $_{\rm u}$	or	"Xaa"	used,	ror	SEQ	LD#:116	

VERIFICATION SUMMARY

PATENT APPLICATION: US/09/729,658

DATE: 12/12/2000 TIME: 12:07:56

Imput Set : A:\55924.app

Output Set: N:\CRF3\12122000\1729658.raw

L:9 M:270 C: Current Application Number differs. Replaced Application Mumber L:10 M:271 C: Current Filling Date differs, Replaced Current Filling Date 1:398 M:258 W: Mandatory Feature missing, 220> not found for SFQ 1D#:5 L:398 M:258 W: Mandatory Feature missing, 221> not found for SEQ 1D#:5 L:398 M:258 W: Mandatory Feature missing, 222> not found for SEQ 1D#:5 L:398 M:258 W: Mandatory Feature missing, $\sim 223 >$ not found for SEO 1D#:5 2:398 M:340 W: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:5-L:493 M:258 W: Mandatory Feature missing, 220> not found for SEO ID#:9 L:493 M:258 W: Mandatory Feature missing, 221> not found for SEO ID#:9 L:493 M:258 W: Mandatory Feature missing, <222> not found for SEO ID#:9 L:493 M:258 W: Mandatory Poature missing, <223> not found for SEQ 10#:9 1:493 M:340 W: (46) "n" or "Xaa" used: Feature required, for SEQ ID4:9 L:534 M:258 W: Mandatory Feature missing, $\langle 220 \rangle$ not found for SEO 1D4:11 4:534 M:258 W: Mandatory Feature missing, <221> not found for SEQ ID#:11 L:534 M:258 W: Mandatory Feature missing, <222> not found for SEQ 4D#:11 L:534 M:258 W: Mandatory Feature missing, <223> not found for SEO 4D#:11 L:534 M:340 W: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:11 1:722 M:258 W: Mandatory Feature missing, <223> not found for SEQ fD#:12 $L:722 \text{ M}:340 \text{ W}: (46) \text{ "n" or "Xaa" used: Feature required, for SEQ <math>\text{ID}^{\pm}:12$ L:736 M:258 W: Mandatory Feature missing, +223> not found for SEO ID#:12 M:340 Repeated in SegNo:12 $L_1:744$ M:258 W: Mandatory Feature missing, <223> not found for SEO TD#:12 L:1930 M:258 W: Mandatory Feature missing, <221> not found for SEQ ID#:43 L:1930 M:258 W: Mandatory Feature missing, <222> not found for SEO ID#:43 L:1930 M:340 W: (46) "n" or "Xaa" used: Feature required, for SEQ $1D^{\frac{1}{2}}:43$ L:2657 M:258 W: Mandatory Feature missing, <220> not found for SEQ 1D#:95 L:2657 M:258 W: Mandatory Feature missing, <221> not found for SEQ ID#:95 L:2657 M:258 W: Mandatory Feature missing, <222> not found for SEQ ID#:95 L:2657~M:258~W: Mandatory Feature missing, <223> not found for SEQ LD#:95 L:2657 M:340 W: (46) "n" or "Xaa" used: Feature required, for SEQ 1D#:95 L:2658 M:258 W: Mandatory Feature missing, <220> not found for SEQ ID#:95 L:2658 M:258 W: Mandatory Feature missing, <221> not found for SEQ ID#:95 L:2658 M:258 W: Mandatory Feature missing, <222> not found for SEQ IDA:95 $\pm:2658$ M:258 W: Mandatory Feature missing, <223> not found for SEQ 1D#:95 M:340 Repeated in SeqNo-95 L:2659 M:258 W: Mandatory Feature missing, <220> not found for SEQ JD#:95 L:2659 M:258 W: Mandatory Feature missing, <221> not found for SEQ IDE:95 1:2659 M:258 W: Mandatory Feature missing, +222> not found for SEQ ID#:95 L:2659 M:258 W: Mandatory Feature missing, <223> not found for SEQ JD#:95 1:2662 M:258 W: Mandatory Feature missing, <220> not found for SEQ ID#:95 L:2662 M:258 W: Mandatory Peature missing, $\sim\!221\!>$ not found for SEO ID#:95 L:2662 M:258 W: Mandatory Feature missing, $<\!222\!>$ not found for SEQ ID#:95 L:2662 M:258 W: Mandatory Feature missing, <223> not found for SEQ ID#:95 h:2693 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:97 L:2694 M:341 W: (46) "n" or "Xaa" used, for SEQ TD#:97 L:2695 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:97 E:2761 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:101 L:2762 M:341 W: (46) "n" or "Xaa" used, for SEQ TD#:101